



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,014	01/29/2004	John C. Kosco	030737	4726
26285	7590	05/15/2006	EXAMINER	
KIRKPATRICK & LOCKHART NICHOLSON GRAHAM LLP 535 SMITHFIELD STREET PITTSBURGH, PA 15222			WYSZOMIERSKI, GEORGE P	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 05/15/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/767,014	KOSCO, JOHN C.	
	Examiner	Art Unit	
	George P. Wyszomierski	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-100 is/are pending in the application.
- 4a) Of the above claim(s) 68-78,85-92 and 95-98 is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-35,37-64,66,67,79-84,93,94,99 and 100 is/are rejected.
- 7) Claim(s) 36 and 65 is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 3/19/04.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: ____.

Art Unit: 1742

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-67, 79-84, 93, 94, 99 and 100, drawn to a process, classified in class 419, subclass 28.
 - II. Claims 68-78, 85-92, and 95-98, drawn to sintered metal parts, classified in class 75, subclass 240+.

2. The inventions are independent or distinct, each from the other because:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process, such as by laser treatment to achieve the desired density in the surface.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their different classification and recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Mark Leslie on May 4, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-67, 79-84, 93, 94, 99 and 100. Affirmation of this election must be made by applicant in replying to this Office action. Claims 68-78, 85-92, and 95-98 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Claims 1-19, 35, 80 and 81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1, line 4 recites "at least one of peening and surface rolling", yet line 6 refers to "after shot peening". It would appear that in order to perform the operation in line 6, then the operation in line 4 must include peening. Applicant may amend line 4 of the claim to recite "peening and optionally surface rolling...."

b) Claim 35, line 2 refers to "tempering the compact after sizing", but the term "sizing" lacks antecedent basis or context in this claim.

c) Claims 80 and 81 lack units for "0.005" and "0.010" respectively. The claimed values are presumed to be in inches for purposes of examination.

d) Claims dependent upon any of the above are likewise rejected under this statute.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 9, 15, 17, 20-22, 25, 31, 34 and 35 are rejected under 35

U.S.C. 102(b) as being anticipated by Lohman et al. (U.S. Patent 4,121,927).

Lohman example 1 discloses a process comprising the steps as presently claimed, i.e. preparing a composition within the boundaries of claims 2-4, compacting, sintering, shot peening, forging, reheating, quenching and tempering under conditions as recited in the instant

claims, to achieve at least 98% theoretical density. Thus, all aspects of the claimed invention are held to be fully disclosed by Lohman et al.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7, 8, 10-14, 16, 23, 24, 26-30, 32, 33, 93 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lohman et al.

The Lohman disclosure does not specify some of the numerical ranges as presently claimed, and does not discuss pre-sintering or a surface essentially free of finger oxides. These differences are not seen as resulting in a patentable distinction between the prior art and the claimed invention because:

a) With respect to claims 7, 8, 23 and 24, the process disclosed by Lohman would include processes that employ shot having the diameters as presently claimed. In general, the recitation of a dimension does not render a process patentable in the absence of evidence of criticality of the claimed dimension.

b) With respect to claims 10-14, 26-30, 93 and 94, Lohman does not disclose the specific depth at which the density of e.g. 99.3% was measured. However, it is a reasonable assumption that the density of the prior art products is at the levels disclosed therein at a point near the surface of the material, i.e. at a depth within the ranges presently claimed. Also, this level of 99.3% is taken by the examiner to be equivalent to "full density" as recited in claims 14, 30 and 93.

c) With respect to claims 16 and 33, the sintering performed in the prior art is not an instantaneous process but rather one which occurs over a period of time. The earlier portion of the prior art sintering process can be considered equivalent to the pre-sintering as presently claimed.

d) With respect to claim 32, the prior art does not refer to finger oxides, and the examiner's position is therefore that either no such oxides are present or that they would be present in such a small amount as to fall within the "essentially free of" limitation as presently claimed.

Thus, a *prima facie* case of obviousness is established between the disclosure of Lohman et al. and the presently claimed invention.

9. Claims 38-49, 51-64 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lohman et al. in view of Kosco (U.S. patent 6,338,747).

The Lohman patent, discussed above, discloses or renders obvious all of the presently claimed process steps for reasons as set forth in items 6 and 8 supra. Lohman does not disclose making gear teeth having a root region and flank region as presently claimed. Kosco indicates that it was known in the art, at the time of the invention, to form gear parts by a process which includes compacting, sintering, and mechanical working of a powder metallurgy material in order to produce a substantially fully densified product, i.e. a process substantially the same as that described by Lohman. Further, the mechanical working of Kosco may include shot peening; see claim 49 of Kosco. These teachings of Kosco would have motivated one of ordinary skill in the art to perform the process of Lohman et al. upon material for gears.

10. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lohman et al. in view of Kosco, as applied to claim 66 supra, and further in view of Bengtsson et al. PG Pub.No. 2003/01555041).

The Lohman and Kosco patents do not disclose decarburizing following sintering as required in the instant claim. Bengtsson indicates that it was known in the art at the time of the invention to decarburize a powder metal material that had been subjected to compacting and sintering. Bengtsson further discloses the advantages of such a step when making highly densified materials for use as gears. Thus, it would have been considered an obvious expedient for one of ordinary skill in the art to include a decarburization step when producing gears (as disclosed by Kosco) by the process as described by Lohman et al.

11. Claims 19, 37, 79, 99 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lohman et al. in view of Kosco.

The prior art, discussed supra, does not disclose the plating step as required by claims 19, 37, 99 or 100, and does not disclose the welding or brazing step as required by instant claim 79. These differences are not seen as resulting in a patentable distinction between the prior art and the claimed invention because these steps as claimed are nothing more than generic metal processing steps. The inclusion of such steps in a metal treatment process, without limitation on the purpose, conditions, or result of these step(s) in a particular context, cannot be said to patentably distinguish such a process from known processes in the prior art, such as those of Lohman or Kosco. Thus, the processes as presently claimed are held to be at best obvious variants of what is disclosed by the combination of Lohman et al. and Kosco.

12. Claims 36 and 65 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art does not disclose or suggest shot peening, rolling, or honing to introduce compressive stresses in the material in combination with the other steps required by these claims.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the new central facsimile number, (571)-273-8300. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GEORGE WYSZOMIERSKI
PRIMARY EXAMINER
GROUP 1700

GPW
May 11, 2006